

Genetic-Based TCSC Damping Controller Design For Power System stability Enhancement

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Summary

A genetic-based damping controller for a thyristor-controlled series capacitor (GCSC) is presented in this paper. Minimizing the real part of the system eigenvalue associated with low frequency oscillation mode is proposed as the objective function of the design problem. The proposed controller has been examined on a weakly connected power system with different disturbances and loading conditions. Eigenvalue analysis and nonlinear simulation results show that the performance of the proposed GCSC outperforms that of conventional power system stabilizer (CPSS). It is also observed that the proposed GCSC improves greatly the voltage profile of the system under severe disturbances

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